IMPACT

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Uni-Vent™ Model 750
Preventive Maintenance Procedure

Note: Printed Circuit Boards (PCBs) and Integrated Circuits (ICs) are sensitive to electrostatic discharge (ESD). Perform all work in a static controlled environment. To help in re-assembly, note and record orientation of all parts and hardware. Part Numbers have been included to aid in preventive maintenance. Refer to Operation & Service Manual for drawings, pictures, descriptions and additional detail.

Equipment Required: RT-200 (Equivalent device(s) that can measure Volume, Flow, Pressure, Inspiratory / Expiratory Times & Breath Rate may be substituted), Michigan Instruments Dual Adult or Adult / Child Test Lung with 2 Liter Capacity or equivalent, Ultrasonic Cleaner, Power Supply (15V, 2A), Digital Volt Meter, 50 PSI medical-grade O_2 source with dual stage regulator.

Tools Required: (See Operation & Service Manual p. 13-1). In addition, you will need a centering tool, knob holder, snap-ring tool and a spacer.

Parts Needed: Latex Tube (540-0082-00), Teflon Tape (312-0001-00)

Important: Before proceeding with each of the next steps, note the position and orientation of all parts. Documenting this information is strongly recommended.

Initial Inspection and Disassembly

1. Inspect the unit for any obvious mechanical, electrical or cosmetic problems.
2. Acquire performance test readings (Perform "Model 750 Ventilator Performance Test Procedures").
3. Disconnect Battery Pack (See Operation & Service Manual p.7-2, steps 1-6). Remove cap from Flow Adjust knob. Using a 3/8"(10mm) socket, loosen nut and remove knob.
4. Remove Lower Case assembly (See Operation & Service Manual p.13-1).

Printed Circuit Board Inspection and Disassembly

1. Disassemble all Printed Circuit Boards (See Operation & Service Manual p.13-2). Note orientation of all cables. Inspect all PCBs for component integrity (i.e. soldering, heat associated flash marks, water damage, vibration damage…etc.). Verify that all ICs are properly installed (Over time ICs may tend to lift up due to "chip creep").
2. Reassemble all PCBs (See Operation & Service Manual p.13-2). When installing Display PCB care should be taken not to over tighten switch and potentiometer nuts.

Flow Control / Manifold Disassembly and Cleaning

1. Remove Connector Panel from Manifold (See Operation & Service Manual p.13-2). Buzzer and Power Jack do not need to be removed.
2. Remove four (4) 4-40 nuts and washers from Manifold Assembly (704-0750-11). Manifold assembly can now be removed from Membrane Panel. Note: An anti-loosening compound is used on studs and nuts do not force nuts or Membrane Panel studs may break.

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3. Loosen and remove Valve Nut (490-0016-00) from Flow Control Valve (704-0750-06). Remove Anti-Turn Bracket (404-0750-71). Unscrew Spindle Valve (490-0015-11) and remove Swivel Valve (490-0018-11). Inspect both valves for defect and wear.
4. Unscrew Valve Body (490-0019-11) from Solenoid Manifold (033-0005-00). Remove Chrome Nipple (480-0141-00). Remove Shoulder Washer (376-0036-00), and Flat Washer (376-0037-00) and Latex Tube (540-0082-00) from Valve Body (490-0019-11). Replace Latex Tube with a new piece, apply Teflon tape to Chrome Nipple and reassemble Flow Control Valve.
5. Loosen the six (6) hex screws holding down the three (3) Valve Coils and remove Valve Coils & Gaskets from Solenoid Manifold.
6. Loosen the four (4) hex screws holding down the Manifold Bracket and remove the two (2) Main Flow Blocks and Gaskets.
7. Loosen the two (2) hex screws holding down the Demand Flow Block and remove block & gasket. Note: Keep Demand Flow Block separated from Main Flow Blocks (They look identical but serve a different purpose).
8. Using a snap-ring tool, remove snap-rings (3) from all three blocks. Remove caps(3) and springs(3) from all three blocks.
9. Loosen the six (6) hex screws holding down the Flow Block Tops on all three blocks. Remove Flow Block Tops.
10. Remove Diaphragms (3) and Stems (3) from blocks. Remember to keep Demand Stem and Diaphragm separated from Main Stems and Diaphragms. Note: Extreme care should be taken when removing diaphragms as they may tear easily (Replacement kits are available PN 714-0001-00).
11. Place Flow Blocks, Flow Block Tops, Stems and Diaphragms in ultrasonic cleaner. (Use 1tsp. Dishwashing liquid for every four (4) cups of water). Clean for 30-60 minutes. Inspect Main Manifold Block and clean for 20-30 minutes if necessary.

Flow Control / Manifold Assembly and Final Inspection

1. Rinse cleaned parts thoroughly with warm water. Allow cleaned parts to dry (oil-less compressed air to force out all water is recommended) and reassemble Solenoid Manifold. Remember, assemble parts in exactly the same position and orientation as before disassembly. Do not over-tighten the six (6) hex screws on Valve Coils.
2. Reassemble Flow Control Valve to Solenoid Manifold and attach Anti-Turn Bracket and Valve Nut.
3. Reassemble Manifold Assembly unto Membrane Panel. Use centering tool to center Spindle in Membrane Panel.
4. Reassemble Connector Panel unto manifold.
5. Acquire Performance Test Readings (Perform "Model 750 Ventilator Performance Test Procedures"). Note: It will be necessary to recalibrate the FLOW ADJUST knob after step 5 of the performance test procedure.
    a. Set the Model 750 RATE to 16 BPM and INSP to 1.0 seconds.
    b. Connect patient valve to the RT-200s "High Flow Range" port. Set RT-200 to Function #41.
    c. Adjust the Flow Control/Manifold spindle for a tidal volume of 500ml/sec and tighten Flow Adjust Knob onto spindle at the 500ml/sec mark. Several adjustments may be necessary.
6. If all values are within specification, reassemble Lower Case and install Battery Pack.